EXPLANATION OF SIGNIFICANT DIFFERENCES

FOR THE

NORWOOD PCB SUPERFUND SITE

NORWOOD, MASSACHUSETTS

February 2005

U.S. Environmental Protection Agency
Region 1 – New England
Boston, MA

Norwood PCB Superfund Site

Explanation of Significant Differences
February 2005

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I. INTRODUCTION

A. Site Name and Location

Site Name: Norwood PCB Superfund Site (Site)

Site Location: Norwood, Norfolk County, Massachusetts

B. Lead and Support Agencies

Lead Agency: United States Environmental Protection Agency (EPA)

Support Agency: Massachusetts Department of Environmental Protection (MADEP)

C. Legal Authority

Under Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 9617 (c), Section 300.435(c) of the National Contingency Plan (NCP), 40 C.F.R. § 300.435(c)(2)(l), and Office of Solid Waste and Emergency Response (OSWER) Directive 9355.3-02, if EPA determines that differences in the remedial action significantly change but do not fundamentally alter the remedy selected in the Record of Decision (ROD) with respect to scope, performance, or cost, EPA shall publish an Explanation of Significant Differences (ESD). The ESD shall explain the differences between the remedial action being undertaken and the remedial action set forth in the ROD and ROD Amendment, and the reasons such changes are being made.

D. Summary of Circumstances Necessitating this Explanation of Significant Differences

The 1989 ROD and the 1996 ROD Amendment for the Site specify a remedy that addresses groundwater, soil, sediment, and building material contamination. In accordance with the 1989 ROD, EPA completed the construction of a 6,000-square foot groundwater treatment plant at the northeastern edge of the Site in November 1995. The plant operated from March 1996 through June 2000 and removed approximately 262 pounds of groundwater contaminants. Groundwater clean-up levels were originally based on drinking water criteria.

In accordance with EPA's 1996 Final Ground Water Use and Value Determination Guidance, in May 2001, MADEP recommended a "low use and value" determination for the groundwater at and in the vicinity of the Site. The determination was made based on the aquifer's classification as a low-yield, non-potential drinking water source area as well as the fact that nearby residential or commercial properties are supplied by public, municipal drinking water sources.

As a result of MADEP's "low use and value" determination, new contaminant exposure pathways were evaluated based on current and potential future use and revised

exposure assumptions. Accordingly, supplemental risk assessment activities were initiated in 2001 and were completed in 2004. As the result of these risk assessments, revised groundwater clean-up levels, hereafter referred to as risk-based action levels (RBALs), were calculated for the Site groundwater in March 2003. EPA, by issuing this ESD, has determined that these RBALs will become the new groundwater clean-up levels for this Site.

This ESD will also document minor changes to the soil, sediment, and building material components of the remedy that deviated from the 1996 ROD Amendment.

E. Availability of Documents

This ESD and supporting documentation shall become part of the Administrative Record for the Site. An index of information being added to the Administrative Record for this ESD is attached as Appendix C. The full Administrative Record, including its index, is available to the public at the following locations and may be reviewed at the times listed:

U.S. Environmental Protection Agency
Records Center
One Congress Street
Boston, MA 02114
(617) 918-1440
Monday through Friday 9:00 a.m. to 5:00 p.m.

Morrill Memorial Library
33 Walpole Street
Norwood, MA 02062
(781) 769-0200
Monday through Thursday 9:00 a.m. to 9:00 p.m.
Friday 10:00 a.m. to 5:00 p.m.
Saturday 9:00 a.m. to 5:00 p.m.
Sunday 1:00 p.m. to 5:00 p.m.

II. SUMMARY OF SITE HISTORY, CONTAMINATION PROBLEMS, AND SELECTED REMEDY

A. Site History and Contamination Problems

The Site is comprised of approximately 26 acres of mainly commercial and industrial property and is bordered by Route 1 and the Dean Street access road to the east; residential areas to the north (across Meadow Brook) and west (adjacent to Pellana Road); and Dean Street to the south. The Site consists of several parcels of land, including the former Grant Gear facility; Kerry Place; and portions of Meadow Brook. In 1979, the Site was subdivided. The northeastern portion of the Site, approximately 9 acres, was purchased by Grant Gear Realty Trust and leased to Grant Gear Works, Inc. The southern and western portions of the Site were further subdivided, a major portion

of which was named Kerry Place and now is comprised of commercial and light industrial buildings. Beginning in the 1940s, previous owners or operators of the Grant Gear facility used polychlorinated biphenyls (PCBs) in the production of electrical transformers and other electrical components. Many of these operations resulted in the contamination of site soil, groundwater, building surfaces, and Meadow Brook sediments.

Groundwater was contaminated with PCBs, volatile organic compounds (VOCs) such as trichloroethylene (up to 1,700 ppb) and vinyl chloride, and semivolatile organic compounds (SVOCs). Soil and sediments were contaminated with PCBs (up to 26,000 ppm), polycyclic aromatic hydrocarbons (PAHs), and heavy metals.

In 1983, after MADEP detected high levels of PCBs in the soil on the Site, EPA conducted an Emergency Removal Action which resulted in the removal of over 500 tons of highly contaminated soil. In 1986, MADEP installed a 4-foot high wire mesh fence around a 1.5-acre portion of the Site and constructed a protective liner made of gravel and fabric behind the Grant Gear building to limit access to remaining areas with significant concentration of PCBs in surface soils.

EPA placed the Site on the National Priorities List in 1986, making the Site eligible for Superfund clean-up funds. EPA subsequently completed the Remedial Investigation and Feasibility Study (RI/FS) and selected the remedy in a 1989 ROD. The selected remedy included the excavation and subsequent treatment of soils/sediments by solvent extraction; decontamination of the Grant Gear building; and the construction and operation of a groundwater treatment system. The Ground Water Treatment Plant (GWTP) began operating in 1996. Due to higher than anticipated solvent extraction cost estimates, logistical problems associated with inadequate space to locate this system, and based on the likely reuse of this property for commercial or industrial use, EPA changed the selected remedy in a May 1996 ROD Amendment. The ROD Amendment called for the demolition of the Grant Gear building and the excavation and consolidation of contaminated soils/sediments under an asphalt cap and gravel cover areas. EPA also agreed to restore portions of Meadow Brook excavated as part of the remedy, to specifications determined by the Town of Norwood as part of their flood control project within the area.

Between 1991 and 1998, there have been seven settlements with current and former owners/operators and with the Town of Norwood at the Norwood PCBs Superfund Site. One of the settlements (in 1997) was a Consent Decree that was entered between Cornell Dubilier Electronics (CDE) and Federal Pacific Electric (FPE) Company (Settling Parties) and the United States and Commonwealth of Massachusetts. This Consent Decree required the Settling Parties to perform the following remedial actions: building demolition, soil and sediment excavation, and cap/cover activities. Groundwater treatment and Meadow Brook restoration activities were led by EPA using funds from the Superfund Trust Fund.

Remedial Construction Activities

Three separate remediation phases were completed - one by EPA (Phase 1) and two by the Settling Parties (Phases 2 and 3). EPA also completed Meadow Brook restoration activities as part of Phase 3. The remediation and restoration phases are described below.

Phase 1 - Groundwater Treatment

EPA completed the construction of a 6,000-square-foot groundwater treatment plant at the northeastern edge of the Site in November 1995 under the construction management of the U.S. Army Corps of Engineers (USACE). EPA and MADEP performed a pre-final inspection of the plant on January 11, 1996, after which the treatment plant began operating.

During construction of the groundwater treatment plant foundation, PCB-contaminated soil was excavated, relocated, and stockpiled on-site. PCB-contaminated soil from four outlying areas was also excavated, relocated, and stockpiled on-site. These soils (approximately 2,000 cubic yards) were subsequently consolidated on site under cap/cover areas (see Phase 3a activities below).

A series of nine extraction wells located in the northeast portion of the Site collected contaminated groundwater. Once collected, the water was pumped into the plant and inorganic contaminants were removed in a precipitation process where metals, in the form of particulates, settle out of the water. After metals were removed via precipitation, the remaining solids were removed via filtration. The sludge was then pressed and the resulting filter cake disposed at an off-site disposal facility. Organic contaminants, including PCBs, were removed in an air stripper/carbon adsorption system. During this process VOCs were transferred from the water to the air stream. A catalytic oxidation unit then destroys the VOCs in the air stream before being discharged to the atmosphere. Water exiting the air stripper was then forced through tanks containing activated carbon that adsorb remaining organic contaminants and serves as a last polishing step before the treated water was tested and discharged to Meadow Brook.

Between March 1996 and June 2000, approximately 16.3 million gallons of groundwater were treated and about 262 pounds of chlorinated VOCs were removed from the groundwater beneath the Site. The treatment plant was constructed for a cost of approximately $11 million (including site preparation, construction, and initial stages of operation) and was operated and maintained for a cost of approximately $500,000 per year. Monitoring and extraction wells were sampled quarterly and have been sampled on 27 occasions since startup.

Operation of the groundwater treatment plant was suspended in June 2000 while EPA considered the effect of MADEP's "low use and value" determination for site groundwater. Based on this determination, groundwater beneath and in the vicinity of the Site was no longer considered to be a potential drinking water source and under the state program, the GW-3 standards would apply. The GW-3 designation considers the

impacts and risks associated with the discharge of groundwater to surface water. At the time the GWTP operations were suspended, groundwater concentrations were below MADEP GW-3 standards for all contaminants except for 1,2,4-trichlorobenzene (TCB) and PCBs. The original cleanup levels in the 1989 ROD were based on drinking water criteria, namely the Maximum Contaminant Levels (MCLs); however, no MCL existed for PCBs at that time. Moreover, the 1989 ROD concluded that, due to the continued presence of PCBs in the saturated soils that it would be technically infeasible to reduce PCB levels in groundwater to a health-based groundwater cleanup level. Thus, no clean-up level was established for PCBs. This ESD does not alter that determination and, thus, no PCB cleanup level has been set. Risk to exposure to PCB contamination in groundwater will continue to be controlled via institutional controls restricting the use of groundwater.

EPA also conducted Site-specific risk assessment activities in response to the revised groundwater classification and proposed redevelopment plans. Risk assessment activities evaluated human exposure to VOCs volatilizing from groundwater and the vadose zone into the indoor air of a potential building on the Site and ecological exposure to groundwater contaminants that may discharge into Meadow Brook. Other than the inactive groundwater treatment plant, there are currently no buildings at the Site located above areas of groundwater contamination. As the result of these risk assessments, risk-based action levels (RBALs) were calculated for the Site groundwater in March 2003. Because exposure to contaminants at or below these RBALs will not present an unacceptable risk to human health and the environment, these levels have become the new groundwater performance standards for the Site.

Table 1: Revised Groundwater Cleanup Standards

Contaminant of Potential Concern	Risk Based Action Levels (RBALs): New Groundwater Cleanup Standards Established by this Explanation of Significant Differences (mg/L)
Total 1,2-Dichloroethenes (DCE)	3,660
Trichloroethene (TCE)	108
Tetrachloroethene (PCE)	37
Vinyl Chloride	310
1,2,4-Trichlorobenzene (DCB)	34
1,4-Trichlorobenzene (TCB)	4.6

Because no groundwater cleanup level for PCBs was established, an evaluation of the potential impacts of residual PCB groundwater contamination on Meadow Brook was necessary. This evaluation was completed in July 2004 and summarized in a report entitled Phase II Ecological and Human Health Risk Summary Report. Based on an analysis of the residual groundwater concentrations of VOCs and PCBs, no human health concerns based on discharge to Meadow Brook were identified. In addition, the surface water Ambient Water Quality Criteria (AWQC) for PCBs was exceeded at the

midstream and downstream stations in the 26th sampling round. Notwithstanding these exceedances, the results of a site-specific ecological risk assessment, under existing conditions, it was determined that the levels of PCB in Meadow Brook surface water and sediment do not represent a risk to the environment. Periodic surface water and sediment monitoring in Meadow Brook will continue to be conducted to evaluate long-term compliance with AWQCs and to ensure that they do not increase to a level that may pose an unacceptable risk to human health or the environment. As outlined in Appendix A, Ambient Water Quality Criteria (AWQCs) have been added as action-specific standards for monitoring water quality in Meadow Brook.

As part of the evaluation of PCBs in Meadow Brook surface water and sediment were collected; elevated concentrations of PCBs were detected in one surface soil sample collected from a wooded area adjacent to the Town of Norwood Municipal Light Department's substation on Dean Street. This data point contained 24 ppm of PCBs. A second data point in the vicinity contained 4.2 ppm. The 1996 ROD Amendment set a surficial soil cleanup level for PCBs in the wooded area north of Meadow Brook at 10 ppm. This concentration represented an incremental carcinogenic lifetime risk of 5 x 10^{-6}, based on exposure assumptions associated with an older child (age 6 -16) playing in this area. Applying a similar exposure scenario to the off-site area adjacent to the sub-station dictates an incremental carcinogenic lifetime risk of 1 x 10^{-5} for the maximum concentration detected in this area. Since this falls within EPA's 10^{-4} to 10^{-6} acceptable risk range, no further investigation or action in this area as part of the Norwood PCB Superfund Site is believed to be necessary.

EPA conducted quarterly groundwater monitoring from April 1996 until October 2002. Surface water samples were also collected from Meadow Brook during the last nine quarterly sampling rounds. EPA is in the process of completing an additional round of groundwater monitoring before the end of 2005. EPA will use the monitoring results to further assess the hydrological impacts since the shut down, and may use these results to determine whether any additional (future) groundwater remediation will be necessary. If the results of the monitoring lead EPA to determine that additional active groundwater extraction and treatment is not necessary, the groundwater treatment plan will be decommissioned. Additional groundwater data will be collected periodically as part of overall Operation and Maintenance activities performed by the Settling Parties and will be evaluated during each Five-year Review for the site.

Phase 2 - Building Demolition

In accordance with the 1996 ROD Amendment and the 1997 Consent Decree between EPA and the Settling Parties, the 90,000-square-foot, slab-on-grade Grant Gear building was demolished (rather than being decontaminated in accordance with the 1989 ROD). The one-story building was originally constructed in 1942 and contained a subgrade boiler room and two small second floor mezzanine areas. The building consisted mainly of a large open production area with several smaller areas sectioned-off for use as office and storage space. Demolition activities took place between October 1996 and

February 1997 and were performed by GZA GeoEnvironmental, Inc. for the Settling Parties. USACE provided on-site construction oversight. EPA and MADEP performed a final inspection on February 6, 1997.

The following activities were completed during the building demolition phase:

- inventory, consolidation, and off-site disposal of waste remaining from the former facility operations;
- abatement and off-site disposal of asbestos-containing materials from the building;
- closure of building drainage system including removal and disposal of free liquids and sediment from on-site manholes and grouting of building drain lines;
- removal and off-site disposal/recycling of exterior steel siding;
- removal and shredding of contaminated wooden roof decking (disposed on-site under cap/cover areas during phase 3);
- removal and crushing of brick, concrete, and wallboard (disposed on-site under cap/cover areas during phase 3);
- disposal of remaining facility equipment and certain building materials/debris in the subgrade boiler room, filling the remaining void spaces with “flowable fill”, and constructing a 14-inch thick structural slab over the boiler room area;
- removal and off-site recycling/disposal of two 275-gallon and one 750-gallon empty aboveground condensation collection tanks; and
- removal and disposal in the boiler room of a 1,000-gallon empty underground tank (100 gallons of waste oil disposed off-site).

On January 20, 1999, EPA granted conditional approval of the building demolition Remedial Construction Report (RCR). Final approval was granted on August 8, 2001.

Phase 3 - Soil/Sediment Remediation Phase 3a - Cap/Cover

In accordance with the 1996 ROD Amendment and the 1997 Consent Decree between EPA and the Settling Parties, PCB-contaminated soil and sediment were consolidated on site under cap and cover areas (rather than being treated via solvent extraction as required by the 1989 ROD). Cap/cover activities took place between April 1997 and August 1998 and were performed by GZA GeoEnvironmental, Inc. for the Settling Parties. USACE provided on-site construction oversight. EPA and MADEP performed a final inspection on August 11, 1998.

The following activities were completed during the cap/cover phase:

- Consolidation of approximately 2,000 cubic yards of PCB-contaminated soil stockpiled on-site by EPA from groundwater treatment plant construction and outlying areas excavated during Phase 1;
- Consolidation of approximately 1,600 cubic yards of PCB contaminated soil stockpiled on the adjacent Reardon property;
- Excavation of PCB-contaminated sediment in Reach 1, 2, and 3 of Meadow Brook (to the excavation grades established in USACE’s restoration plans) and consolidation on site;

- Removal of additional stained sediment in Reach 1 and consolidation on site;
- Excavation of on and off-site PCB contaminated soils and consolidation on site;
- Excavation of “hot spot” soils below water table and disposal on site above the water table;
- Removal and disposal of one 10,000-gallon and one 20,000-gallon underground fuel oil tanks;
- Installation of storm water runoff control/drainage; and
- Installation of asphalt cap (approximately 4.5 acres) and gravel covers (approximately 1.6 acres).
- Construction of storm water detention basin (for both remedial and redevelopment purposes);
- Installation of subsurface drainage structures;

Cap/cover remediation activities were conducted in coordination with certain proposed redevelopment activities. Redevelopment plans have not been finalized. The following redevelopment activities were also completed during this phase:

- Construction of two retaining walls; and
- Installation of electrical conduit and light pole bases.

EPA received the final Soil/Brook Remediation RCR in September 2003.

In accordance with the Consent Decree, the Settling Parties will be responsible for 1) performing all O&M activities in order to maintain the integrity and effectiveness of cap and cover areas, and 2) conducting appropriate monitoring activities to assess the protectiveness and performance of the remedy. These activities are documented in O&M and environmental monitoring work plans finalized in November 2004.

The Settling Parties’ estimated cost for completing phases 2 and 3a is $6.6 million.

Phase 3b - Meadow Brook Restoration

In accordance with the 1996 ROD Amendment and after excavation of contaminated Brook sediments by the Settling Parties, EPA (under the construction management of USACE) restored and stabilized the side slopes and bottom of the excavated portions of Meadow Brook to the specifications provided by the Town of Norwood as part of their flood control project. Although the sediment clean-up level for PCBs in Brook was 1 ppm, the Brook was only excavated to the depths required to meet the contours of the flood control project. The side slopes and bottom of the Brook were then restored with a layer of geotextile fabric and appropriate restoration materials (i.e., rip rap, interlocking concrete blocks, or precast concrete culvert sections) that covered any remaining contamination located at depths below the flood control contours. Restoration activities in Reach 1 of Meadow Brook (adjacent to the Site) took place between October 1997 and December 1997. Due to concerns related to the use of the interlocking concrete blocks on the steeper slopes within Reach 2, a decision was made to utilize precast

concrete culvert sections. This redesign effort, as well as high water conditions, resulted in delays in completing restoration activities in Reach 2 and 3. Reach 2 and 3 activities took place between April 1999 and July 1999. EPA and MADEP performed a final inspection on August 11, 1999.

The following activities were completed during the Brook restoration phase:

- Preparation of Brook side slopes and bottom (excavate or backfill) consistent with flood control contours and restoration materials;
- Installation of rip rap (upstream portion) and interlocking concrete blocks (downstream portion) on top of geotextile in Reach 1;
- Installation of precast concrete culvert sections in upstream portion of Reach 2;
- Installation of rip rap on top of geotextile in downstream portion of Reach 2;
- Installation of rip rap 100 feet into Dean Street culvert (Reach 3);
- Installation of topsoil and seed to top of slope and in voids of interlocking concrete blocks;
- Encasement of two sewer syphon lines across the Brook;
- Construction of a support structure for a 30 inch sewer main adjacent to the Brook; and
- Restoration of work areas (replace fencing, hydroseed, plantings).

Meadow Brook restoration activities were conducted for a cost of approximately $775,000. The final Meadow Brook Restoration Report was prepared by USACE and was submitted to EPA on February 1, 2002.

C. Summary of 1989 ROD

The remedial decision documented in the 1989 ROD included the excavation and treatment by solvent extraction of approximately 34,000 cubic yards of PCB-contaminated soils and sediments. After treatment, the ROD required the on-site backfilling of soils and sediments to be covered with asphalt or clean fill, and the off-site incineration of extracted PCB oils. The original remedy also included the flushing and cleaning of the Grant Gear building and drainage system.

The ROD also called for the remediation of groundwater. In particular, the ROD required contaminated groundwater to be collected with extraction wells, treated in an on-site treatment plant, and discharged to Meadow Brook. Groundwater treatment included carbon absorption for PCBs, air stripping for VOCs, and precipitation/filtration for metals. Wetland restoration, long term monitoring, and institutional controls restricting groundwater use were also required in the 1989 ROD.

D. Summary of the 1996 ROD Amendment

In order to address higher than anticipated solvent extraction costs and logistical problems with the citing of solvent extraction equipment and in consideration of the likely commercial/industrial reuse of the Site, EPA issued a ROD Amendment in May 1996. The ROD Amendment included the demolition of the Grant Gear building and

excavation and consolidation of PCB contaminated soils and sediments under asphalt cap and gravel cover areas. The amended remedy also included remediating a "hot spot" of soil contaminated with TCB below the water table. The groundwater remedy remained unchanged from the 1989 ROD. Long-term monitoring, cap and cover maintenance, and institutional controls were also requirements of the ROD Amendment.

III. BASIS FOR ESD

This ESD documents EPA's decision to modify the groundwater clean-up levels originally established in the 1989 ROD. In addition, this ESD will also document minor changes to the soil, sediment, and building material components of the remedy specified in the 1996 ROD Amendment.

A. Reclassification of Groundwater

Groundwater is not currently used for drinking water in the vicinity of the Site. In May 2001, MADEP submitted a "low use and value" determination for the groundwater in the vicinity of the Site. The United States Geological Survey has classified the aquifer as low-yield and MADEP no longer considers groundwater beneath this site to be used as a drinking water source; this is a significant change in status from the previous drinking water classification in effect at the time the1989 ROD was prepared. As a result, drinking water standards are no longer appropriate as groundwater cleanup standards. Instead, RBALs have been calculated which are protective of current and future expected groundwater use.

As a result of the revised groundwater classification, site-specific risk assessment activities were conducted to ensure that revised groundwater cleanup levels would not pose an unacceptable risk to human health and the environment. Additional risk assessment activities were required to evaluated the following:

- human exposure to VOCs volatilizing from groundwater and/or on-site contaminated soils into the indoor air of a potential building on the Site,
- human exposure to contaminated soil and groundwater which may arise from a construction worker exposure scenario, and
- ecological exposure to groundwater contaminants that may discharge into Meadow Brook.

Other than the inactive groundwater treatment plant, there are currently no buildings at the Site located above areas of groundwater contamination. However, based on the updated assessment, it was determined that a vapor barrier (or other means of mitigating indoor vapors) would be required if a structure were built on site. Any specific redevelopment proposal would need to comply with restrictions outlined in the Institutional Controls for the Site called for in the ROD and Amended ROD.

Regarding the ecological effects of contaminant(s) discharging to Meadow Brook, RBALs were calculated based in the expected attenuation of groundwater contamination across the site (prior to discharge) and the dilution of any discharge with the remainder

of the stream. With the exception of PCBs, for which a clean up gal has not been proposed, all contaminants meet the RBALs. These new RBALs are appropriate because they do not present an unacceptable risk to human health or the environment, are cost effective because active treatment will not be necessary, resulting in $500,000 savings per year. As noted above, site groundwater as well as Meadow Brook surface water and sediment will continue to be monitored to ensure that the remedy remains protective in the long-term. EPA will also continue conducting Five-year Reviews of the remedy to ensure that it remains protective and to evaluate compliance with the Applicable or Relevant and Appropriate Requirements (ARARs) outlined in Appendix A to this ESD.

B. Soil, Sediment, Building Material Component Changes

The 1996 ROD Amendment required that the underground storage tank (UST) that served the Grant Gear building's boiler be decommissioned in accordance with applicable regulations. A second UST was discovered during the 1997 building demolition phase of remediation. Therefore, both USTs were removed and disposed off-site as directed by the State Fire Marshall. Stained soils below the tanks were excavated and also disposed of off-site. The Settling Parties completed this work for approximately $118,000, a minimal amount when compared to the total cost of the Site remedial action.

The 1996 ROD Amendment required that Meadow Brook sediments be removed only to the elevation required for the restoration of the bottom and side-slopes of the Brook. However, stained sediments in Meadow Brook in the area of the former Grant Gear building roof drain outfall were discovered during the 1997 soil/brook phase of remediation. Additional stained soil was identified during detention berm construction activities. The Settling Parties excavated the stained sediments and soils and then disposed these materials on-site under the asphalt cap. The Settling Parties completed these activities for approximately $63,000, a minimal amount when compared to the total cost of the Site remedial action.

IV. DESCRIPTION OF SIGNIFICANT DIFFERENCES

EPA is changing the groundwater clean-up levels due to a change in the groundwater classification. Other minor changes to the soil, sediment, and building material components of the remedy are also being documented. As a result of these changes, EPA considers the modified remedy to be adequately protective of human health and the environment. A description of the changes follows below.

A. Revised Groundwater Cleanup Levels

In response to the revised groundwater classification, supplemental risk assessment activities were conducted. These efforts resulted in the calculation of RBALs for the Site. Table 2 below shows a comparison of the 1989 ROD-specified groundwater clean-up levels and the new RBALs. The assessments have also demonstrated that levels for the contaminants of concern at the Site can be set at the revised levels without causing

unacceptable risk to human health and the environment. Moreover, the United States and the Commonwealth of Massachusetts will incur a significant savings in Site related costs from long-term groundwater extraction and treatment.

Table 2: Comparison of Groundwater Clean-up Goals from 1989 ROD and new RBALs

Contaminant of Potential Concern	Groundwater Cleanup Standards Established in 1989 Record of Decision (mg/L)	Risk Based Action Levels (RBALs): New Groundwater Cleanup Standards Established by this Explanation of Significant Differences (mg/L)
Total 1,2-Dichloroethenes (DCE)	0.175	3,660
Trichloroethene (TCE)	0.005	108
Tetrachloroethene (PCE)	0.005	37
Vinyl Chloride	0.002	310
1,2,4-Trichlorobenzene (DCB)	0.35	34
1,4-Trichlorobenzene (TCB)	0.005	4.6

B. Soil, Sediment, Building Material Component Changes

During building demolition and soil/brook remediation activities, different Site conditions were encountered than were originally anticipated. Two USTs were identified rather than one and additional stained soils and sediments were discovered. In order to prevent the migration of contaminants into groundwater or surface water, both USTs and the stained soils and sediments were removed and disposed of properly at minimal additional cost.

V. SUPPORT AGENCY COMMENTS

MADEP has participated with EPA in developing this ESD and concurs with the changes. See Appendix B for the MADEP concurrence letter.

VI. STATUTORY DETERMINATIONS

EPA has determined that the selected remedy specified in the ROD and ROD Amendment, and the changes pursuant to this ESD, remain protective of human health and the environment, comply with Federal and State requirements that are applicable or relevant and appropriate, and are cost-effective. The revised remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable for

this Site. A list of Applicable or Relevant and Appropriate Requirements (ARARs) is provided as Appendix A to this ESD.

VII. PUBLIC PARTICIPATION

This ESD and supporting information are available for public review at the locations identified within this document. In addition, a notice of availability of the ESD will be provided to a local newspaper of general circulation.

VIII. DECLARATION

For the foregoing reasons, by my signature below, I approve the issuance of an Explanation of Significant Differences for the Norwood PCB Superfund Site in Norwood, Massachusetts and the changes and conclusions stated therein.

Susan Studlien, Director
Office of Site Remediation and Restoration
US EPA Region 1

2-23-05
Date

Appendix A
Applicable or Relevant and Appropriate Requirements (ARARs) Tables

AUTHORITY	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	ACTION TAKEN TO ATTAIN ARARs
CHEMICAL SPECIFIC ARARs:				
Federal Criteria, Advisories, and Guidance	Technical Basis for Deriving Sediment Quality Criteria for Non-ionic Organic Contaminants for the Protection of Benthic Organisms Using Equilibrium Partitioning (EPA-822-R-93-011) cleanup levels.	To be Considered	This guidance is used to establish criteria to protect the aquatic organisms in streams and to determine environmental risk within the sediment and to set sediment.	The criteria established were used to evaluate risks to aquatic organisms exposed to contaminated water entrained
	Clean Water Act – Sec. 304 Federal Ambient Water Quality Criteria 33 USC 1314; 40 CFR 122.44	Relevant and Appropriate	Federal AWQC are criteria for protection of human health and aquatic organisms which have been developed for carcinogenic and Brook noncarcinogenic compounds. AWQC are developed under the Clean Water Act (CWA) as guidelines from which states develop water quality standards.	AWQC were used to characterize risks to fresh water aquatic life in Meadow Brook
	EPA Carcinogenic Assessment Group Potency Factors	To be Considered	Potency factors are developed by the EPA from Health Effects Assessments or Evaluation by the Carcinogenic Assessment Group.	EPA Carcinogenic Potency Factors were used to complete the individual incremental cancer risk resulting from exposure to site contaminants.
	EPA Risk Reference Doses (RfDs)	To be Considered	RfDs are does levels developed by the EPA for non-carcinogenic effects.	EPA RfDs were used to characterize risks due to exposure to contaminants on site.
LOCATION SPECIFIC ARARs				
Federal Regulatory	Wetlands Executive Order (EO 11990) 40 CFR Part 6, Appendix A	Applicable	Under this regulation, Federal agencies are required to minimize the destruction, loss, or degradation of wetlands, and preserve and enhance natural and beneficial values of wetlands.	Any redevelopment or O &M will include all all practicable means of minimizing harm to wetlands.
	Floodplains Executive Order (EO 11988) 40 CFR Part 6, Appendix A	Applicable	Federal agencies are required to reduce the risk of flood loss, to minimize the impact of floods, and to restore and preserve the natural and beneficial values of floodplains.	The remedial action was designed to keep all activities out of the floodplain to the greatest extent practicable.
	Clean Water Act (CWA) – Section 404 Dredge and Fill Requirements (33 U.S.C. 1344; 40 CFR Part 230)	Applicable	No activity that adversely affects a wetland shall be permitted if a practicable alternative that has less effect is available.	Ongoing monitoring and O&M activities in and adjacent to Meadow Brook or any other Site wetlands will meet these standards.
	Fish and Wildlife Coordination Act 16 U.S.C. 661	Applicable	Before undertaking any Federal action that causes the modification of any body of water or affects fish and wildlife.	Federal and State fish and wildlife agencies will be consulted concerning any monitoring and O&M activities in and adjacent to Meadow Brook.

AUTHORITY	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	ACTION TAKEN TO ATTAIN ARARs
	Resource Conservation and Recovery Act (RCRA) Location Standards (40 C.F.R. 264.18)	Relevant and Appropriate	This regulation outlines the requirements for constructing a RCRA facility on a 100-year floodplain.	Hazardous waste disposed of or generated within the floodplain of Meadow Brook will be managed to prevent a release of hazardous waste in the event of a flood event.
State Regulatory	Massachusetts Wetlands Protection Act (M.G.L. c.131 Section 40 : 310 CMR 10.00)	Applicable	These regulations outline the requirements necessary to work within 100 feet of a wetland.	All redevelopment, monitoring, or O&M work within areas regulated under this standard will be conducted in compliance with these regulations.
	Massachusetts Waterways Regulations (M.G.L. c.21, Sections 26-53; 314 CMR 9.00)	Applicable	Regulates work within waterways, including water quality protection.	All redevelopment, monitoring, or O&M work within or adjacent to Meadow Brook will comply with these standards.
ACTION SPECIFIC ARARs				
Federal Regulatory Requirements	Resource Conservation and Recovery Act (RCRA) Subtitle C (40 C.F.R. 260-262)	Applicable (for generated wastes)/; Relevant and Appropriate (for closure/ post closure)	RCRA regulates the generation, transport, storage, treatment, and disposal of hazardous Waste. CERCLA specifically requires (in Section 121(d)(3) that hazardous substances from response actions be disposed of at facilities in compliance with Subtitle C of RCRA	Wastes generated during monitoring or O & M activities will be characterized and handled in accordance with applicable RCRA regulations. Wastes left in place under the cap will be managed in compliance with closure and post-closure standards.
	Toxic Substances Control Act (TSCA), 15 U.S.C. §§ 2601, *et seq.*, 40 C.F.R. 761.75	Applicable	Establishes standards for PCB landfills, including permitting waivers for clay soils, synthetic liner, 50 feet to water table, and leachate collection requirements upon a finding by the Regional Administrator.	Closure/post closures standards (incorporating waivers invoked under the ROD amendment) for the capped PCB wastes will be followed.
	Toxic Substances Control Act (TSCA), (40 C.F.R. 760.60)		Establishes treatment and disposal standards for PCB wastes generated as part of redevelopment, monitoring or O&M activities.	Treatment and disposal standards for PCB generated wastes will be satisfied.
	Clean Water Act - Sec. 304 Federal Ambient Water Quality Criteria 33 USC 1314; 40 CFR 122.44	Relevant and Appropriate	AWQC are developed under the Clean Water Act (CWA) as guidelines from which states develop water quality standards.	AWQC are used to monitor water quality in Meadow Brook to assess the protectiveness of the remedy.
	Guide on Remedial Actions at Superfund Sites with PCB Contamination (OSWER Directive 9355.4-01, August 1990)	To be considered	Sets forth guidelines for implementing remedial actions for PCBs	Ongoing monitoring and O&M activities will be conducted consistent with the goals of this guidance.
State Regulatory Requirements	Massachusetts Groundwater Protection Regulations 314 CMR 6.00	Relevant and Appropriate	These regulations establish the criteria for classifying ground water and for establishing monitoring standards.	Groundwater has been reclassified as Class III, designated for uses other than as a source of potable. water supply. The regulations also set standards that will be used for monitoring.

AUTHORITY	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	ACTION TAKEN TO ATTAIN ARARs
	Massachusetts Ambient Air Quality Standards	Applicable	These regulations specify emissions standards for particulates and lead.	All redevelopment, monitoring and O&M activities will be conducted in a manner to minimize the generation of dust or other hazardous wastes.
	Massachusetts Air Pollution Control Regulations 310 C.M.R. 7.00	Applicable	Regulations specific to control of odor and requirements for handling asbestos wastes and fugitive dust emissions.	Any odors and fugitive dust generated by O&M, redevelopment, and monitoring will be controlled. under these standards.
	Massachusetts Hazardous Waste Regulations 310 C.M.R. 30.00	Applicable	Regulations governing the generation, treatment, storage, and disposal of hazardous waste.	These regulations will be followed in conducting O&M, monitoring, and redevelopment activities. Potions of these regulations, which are specific to on-site PCBs are not applicable since PCB are adequately regulated under TSCA.
	Massachusetts Hazardous Waste Regulations 310 C.M.R. 30.125(b)	Applicable	Requirements for Toxic Characteristic Leaching Procedure (TCLP).	Wastes generated for off-site disposal in conducting O&M, monitoring, and redevelopment activities will be characterized and handled in accordance with these standards.
	Massachusetts Hazardous Waste Regulations 310 C.M.R. 30.302	Applicable	Requirements for any generator of a waste to determine if the waste is hazardous.	Wastes generated for off-site disposal in conducting O&M, monitoring, and redevelopment activities will be characterized and handled in accordance with these standards.

Appendix B
MADEP Concurrence Letter

Norwood PCBs
5.1
222063

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

MITT ROMNEY
Governor

KERRY HEALEY
Lieutenant Governor

ELLEN ROY HERZFELDER
Secretary

ROBERT W. GOLLEDGE, Jr.
Commissioner

February 15, 2005

Ms. Susan Studlien, Director
Office of Site Remediation and Restoration
US EPA, Suite 1100 (HIO)
One Congress Street
Boston, MA 02114-2023

RE: Explanation of Significant Differences for Norwood PCBs Superfund Site Norwood, MA.

Dear Ms. Studlien:

The Department of Environmental Protection (the Department) has reviewed the proposed Explanation of Significant Differences (ESD) dated February 2005 for the Norwood PCBs (Norwood) Superfund Site. This ESD amends the original 1989 Record of Decision (ROD) and the 1996 Amended ROD. The Department concurs with the ESD for the Site.

The purpose of this ESD is principally to adopt new groundwater clean up goals. Minor changes are also documented for the soil/source remedy as well as for the remedy implemented along Meadow Brook. The Department believes that these changes to the remedy will not affect its overall protectiveness.

The Department has evaluated the ESD for consistency with M.G.L. Chapter 21E and the Massachusetts Contingency Plan (MCP). This ESD establishes new groundwater cleanup goals based on the Department's revised regulatory classification for groundwater at the site. At the time the ROD was finalized, the groundwater at the site was classified as a potential drinking water source area. In 1993 the groundwater classification was revised with the groundwater at and in the area of the site no longer considered a potential of current drinking water source area. This change in classification is discussed in the 2001 Groundwater Use and Value Determination prepared by the Department and reflected in the "low use and value" determination assigned to the site groundwater. In consideration of the new classification, EPA re-evaluated the potential groundwater exposures and risks and revised the cleanup goals. The new cleanup goals contained in the ESD reflect updated risk information including human health and the environment.

The Department appreciates the opportunity to provide input on this ESD and looks forward to the continuing implementation of the remedy at the Site. If you have any questions please call Daniel Keefe, Project Manager for the Site, at (617) 292-5940.

Sincerely,

Richard Chalpin, Assistant Commissioner
Bureau of Waste Site Cleanup

e-copy:Bob Ciaciarulo, US EPA
e-file: 05.00 Record of Decision/DEP Concurrence Letter Norwood PCBs ESD 2005

Appendix C
Administrative Record Index for the Explanation of Significant Differences

Norwood PCBs
NPL Site Administrative Record
Explanation of Significant Differences
Operable Unit 1

Index

Prepared by
EPA New England
Office of Site Remediation & Restoration

Introduction to the Collection

This is the Administrative Record for the Norwood PCBs Superfund site, Norwood, MA, OU 1, Entire Site, Explanation of Significant Differences (ESD), released February 2005. The file contains site-specific documents and a list of guidance documents used by EPA staff in selecting a response action at the site.

This file includes, by reference, the administrative record files for the Norwood PCBs, OU 1 Record of Decision, issued September 29, 1989 and OU 1 Record of Decision Amendment, issued May 17, 1996.

The administrative record file is available for review at:

Morrill Memorial Library
Walpole Street
Norwood, MA 02062
(781) 769-0200 (phone)
http://www.ci.norwood.ma.us/library/index.html

EPA New England Superfund Records & Information Center
1 Congress Street, Suite 1100 (HSC)
Boston, MA 02114 (by appointment)
617-918-1440 (phone)
617-918-1223 (fax)
http://www.epa.gov/region01/superfund/resource/records.htm

Questions about this administrative record file should be directed to the EPA New England site manager.

An administrative record file is required by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA).

AR Collection: 2077
ESD
AR Collection QA Report
*****For External Use*****

03: REMEDIAL INVESTIGATION (RI)

45709 **FINAL SUPPLEMENTAL RISK ASSESSMENT**

Author: FOSTER WHEELER ENVIRONMENTAL CORP **Doc Date:** 04/01/2000 **# of Pages:** 122

Addressee: US ARMY CORPS OF ENGINEERS

Doc Type: REPORT

45695 **FINAL TECHNICAL MEMORANDUM, DEVELOPMENT OF RISK-BASED ACTION LEVELS FOR THE PROTECTION OF ECOLOGICAL RECEPTORS FOR CONTAMINANTS OF POTENTIAL CONCERN IN GROUNDWATER**

Author: FOSTER WHEELER ENVIRONMENTAL CORP **Doc Date:** 03/01/2002 **# of Pages:** 40

Addressee: US ARMY CORPS OF ENGINEERS

Doc Type: REPORT

45694 **TECHNICAL MEMORANDUM, EVALUATION OF THE DISTRIBUTION OF 1,2,4-TRICHLOROBENZENE IN SITE GROUNDWATER**

Author: FOSTER WHEELER ENVIRONMENTAL CORP **Doc Date:** 05/01/2002 **# of Pages:** 10

Addressee: US ARMY CORPS OF ENGINEERS

Doc Type: REPORT

45708 **FINAL AMENDMENT TO THE SUPPLEMENTAL RISK ASSESSMENT**

Author: FOSTER WHEELER ENVIRONMENTAL CORP **Doc Date:** 05/01/2002 **# of Pages:** 128

Addressee: US ARMY CORPS OF ENGINEERS

Doc Type: REPORT

AR Collection: 2077
ESD
AR Collection QA Report
*****For External Use*****

03: REMEDIAL INVESTIGATION (RI)

217044 **PHASE 2 ECOLOGICAL AND HUMAN HEALTH RISK SUMMARY REPORT**

Author: TETRA TECH FW INC **Doc Date:** 07/01/2004 **# of Pages:** 52
Addressee: US ARMY CORPS OF ENGINEERS - NEW ENGLAND DIVISION

Doc Type: REPORT

05: RECORD OF DECISION (ROD)

220671 **RECORD OF DECISION (ROD)**

Author: US EPA REGION 1 **Doc Date:** 09/29/1989 **# of Pages:** 306
Addressee:

Doc Type: REPORT
Doc Type: RECORD OF DECISION

220672 **RECORD OF DECISION (ROD) AMENDMENT**

Author: US EPA REGION 1 **Doc Date:** 05/17/1996 **# of Pages:** 87
Addressee:

Doc Type: REPORT

222063 **STATE CONCURRENCE TO EXPLANATION OF SIGNIFICANT DIFFERENCES (ESD)**

Author: RICHARD J CHALPIN MA DEPT OF ENVIRONMENTAL PROTECTION **Doc Date:** 02/15/2005 **# of Pages:** 2
Addressee: SUSAN STUDLIEN US EPA REGION 1 - OFFICE OF SITE REMEDIATION & RESTORATION

Doc Type: LETTER

AR Collection: 2077
ESD
AR Collection QA Report
*****For External Use*****

05: RECORD OF DECISION (ROD)

222061 **EXPLANATION OF SIGNIFICANT DIFFERENCES (ESD)**

Author: US EPA REGION 1 **Doc Date:** 02/23/2005 **# of Pages:** 34

Addressee:

Doc Type: EXPLANATION OF SIGNIFICANT DIF
Doc Type: REPORT

07: REMEDIAL ACTION (RA)

204904 **REMEDIAL CONSTRUCTION REPORT - BUILDING DEMOLITION PHASE - VOLUME 1 OF 2**

Author: GZA GEOENVIRONMENTAL INC **Doc Date:** 11/11/1997 **# of Pages:** 225

Addressee:

Doc Type: REPORT

204905 **REMEDIAL CONSTRUCTION REPORT - BUILDING DEMOLITION PHASE - VOLUME 2 OF 2**

Author: GZA GEOENVIRONMENTAL INC **Doc Date:** 11/11/1997 **# of Pages:** 507

Addressee:

Doc Type: REPORT

49834 **FINAL SUBMITTAL REMEDIAL CONSTRUCTION REPORT SOIL/BROOK REMEDIATION PHASE, VOLUME 1 OF 7**

Author: GZA GEOENVIRONMENTAL INC **Doc Date:** 09/01/2003 **# of Pages:** 491

Addressee: NORWOOD PCB SUPERFUND SITE REMEDIATION TRUST

Doc Type: REPORT

07: REMEDIAL ACTION (RA)

49844 **FINAL SUBMITTAL REMEDIAL CONSTRUCTION REPORT SOIL/BROOK REMEDIATION PHASE, VOLUME 2 OF 7**

Author: GZA GEOENVIRONMENTAL INC **Doc Date:** 09/01/2003 **# of Pages:** 324

Addressee: NORWOOD PCB SUPERFUND SITE REMEDIATION TRUST

Doc Type: REPORT

49846 **FINAL SUBMITTAL REMEDIAL CONSTRUCTION REPORT SOIL/BROOK REMEDIATION PHASE, VOLUME 3 OF 7**

Author: GZA GEOENVIRONMENTAL INC **Doc Date:** 09/01/2003 **# of Pages:** 667

Addressee: NORWOOD PCB SUPERFUND SITE REMEDIATION TRUST

Doc Type: REPORT

49847 **FINAL SUBMITTAL REMEDIAL CONSTRUCTION REPORT SOIL/BROOK REMEDIATION PHASE, VOLUME 4 OF 7**

Author: GZA GEOENVIRONMENTAL INC **Doc Date:** 09/01/2003 **# of Pages:** 536

Addressee: NORWOOD PCB SUPERFUND SITE REMEDIATION TRUST

Doc Type: REPORT

49848 **FINAL SUBMITTAL REMEDIAL CONSTRUCTION REPORT SOIL/BROOK REMEDIATION PHASE, VOLUME 5 OF 7 (PART 1 OF 2)**

Author: GZA GEOENVIRONMENTAL INC **Doc Date:** 09/01/2003 **# of Pages:** 450

Addressee: NORWOOD PCB SUPERFUND SITE REMEDIATION TRUST

Doc Type: REPORT

AR Collection: 2077
ESD
AR Collection QA Report
*****For External Use*****

07: REMEDIAL ACTION (RA)

49849 **FINAL SUBMITTAL REMEDIAL CONSTRUCTION REPORT SOIL/BROOK REMEDIATION PHASE, VOLUME 5 OF 7 (PART 2 OF 2)**

Author: GZA GEOENVIRONMENTAL INC **Doc Date:** 09/01/2003 **# of Pages:** 488
Addressee: NORWOOD PCB SUPERFUND SITE REMEDIATION TRUST

Doc Type: REPORT

49850 **FINAL SUBMITTAL REMEDIAL CONSTRUCTION REPORT SOIL/BROOK REMEDIATION PHASE, VOLUME 6 OF 7**

Author: GZA GEOENVIRONMENTAL INC **Doc Date:** 09/01/2003 **# of Pages:** 459
Addressee: NORWOOD PCB SUPERFUND SITE REMEDIATION TRUST

Doc Type: REPORT

49851 **FINAL SUBMITTAL REMEDIAL CONSTRUCTION REPORT SOIL/BROOK REMEDIATION PHASE, VOLUME 7 OF 7**

Author: GZA GEOENVIRONMENTAL INC **Doc Date:** 09/01/2003 **# of Pages:** 398
Addressee: NORWOOD PCB SUPERFUND SITE REMEDIATION TRUST

Doc Type: REPORT

217045 **PHASE 2 FIELD INVESTIGATION RESULTS FOR MEADOW BROOK AND THE NEPONSET RIVER**

Author: TETRA TECH FW INC **Doc Date:** 07/01/2004 **# of Pages:** 55
Addressee: US ARMY CORPS OF ENGINEERS - NEW ENGLAND DIVISION

Doc Type: REPORT
Doc Type: SAMPLING & ANALYSIS DATA

AR Collection: 2077
ESD
AR Collection QA Report
*****For External Use*****

08: POST REMEDIAL ACTION

217043 GROUNDWATER PLUME MIGRATION TECHNICAL EVALUATION

Author: FOSTER WHEELER ENVIRONMENTAL CORP **Doc Date:** 01/01/2003 **# of Pages:** 47
Addressee: US ARMY CORPS OF ENGINEERS - NEW ENGLAND DIVISION

Doc Type: REPORT

220080 SECOND FIVE-YEAR REVIEW REPORT

Author: US EPA REGION 1 **Doc Date:** 12/29/2004 **# of Pages:** 81
Addressee:

Doc Type: FIVE-YEAR REVIEW REPORT
Doc Type: REPORT

09: STATE COORDINATION

45710 GROUNDWATER USE AND VALUE DETERMINATION

Author: JAY NAPARSTEK MA DEPT OF ENVIRONMENTAL PROTECTION **Doc Date:** 05/11/2001 **# of Pages:** 6
Addressee: DANIEL COUGHLIN US EPA REGION 1

Doc Type: LETTER

Number of Documents in Collection: 23

GUIDANCE DOCUMENTS

EPA guidance documents may be reviewed at the EPA Region I Superfund Records Center in Boston, Massachusetts.

TITLE
EVALUATION OF THE B.E.S.T. SOLVENT EXTRACTION SLUDGE TREATMENT TECHNOLOGY. TWENTY-FOUR HOUR TEST.

DOCDATE	OSWER/EPA ID	DOCNUMBER
	EPA 600/2-88/051	C027

TITLE
NATIONAL OIL AND HAZARDOUS SUBSTANCES POLLUTION CONTINGENCY PLAN.

DOCDATE	OSWER/EPA ID	DOCNUMBER
		C063

TITLE
PROTECTION OF WETLANDS: EXECUTIVE ORDER 11990. 42 FED. REG. 26961 (1977).

DOCDATE	OSWER/EPA ID	DOCNUMBER
5/24/1977		C003

TITLE
APPLICABILITY OF PCB REGULATIONS TO SPILLS WHICH OCCURRED PRIOR TO THE EFFECTIVE DATE OF THE 1978 REGULATION.

DOCDATE	OSWER/EPA ID	DOCNUMBER
8/3/1979		C057

TITLE
DEVELOPMENT OF ADVISORY LEVELS FOR POLYCHLORINATED BIPHENYLS (PCBS) CLEANUP.

DOCDATE	OSWER/EPA ID	DOCNUMBER
5/1/1986	EPA 600/6-86/002	C019

TITLE
HANDBOOK FOR STABILIZATION/SOLIDIFICATION OF HAZARDOUS WASTE

DOCDATE	OSWER/EPA ID	DOCNUMBER
6/1/1986	EPA/540/2-86-001	2308

TITLE
SUPERFUND REMEDIAL DESIGN AND REMEDIAL ACTION GUIDANCE

DOCDATE	OSWER/EPA ID	DOCNUMBER
6/1/1986	OSWER #9355.0-4A	2011

TITLE
DRAFT GUIDANCE ON REMEDIAL ACTIONS FOR CONTAMINATED GROUND WATER AT SUPERFUND SITES.

DOCDATE	OSWER/EPA ID	DOCNUMBER
10/1/1986	OSWER #9283.1-2	C022

TITLE
SUPERFUND PUBLIC HEALTH EVALUATION MANUAL

DOCDATE	OSWER/EPA ID	DOCNUMBER
10/1/1986	OSWER #9285.4-1	5014

TITLE
COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT OF 1980. AMENDED BY PL 99-499, 10/17/86.

DOCDATE	OSWER/EPA ID	DOCNUMBER
10/17/1986		C018

TITLE
INTERIM GUIDANCE ON SUPERFUND SELECTION OF REMEDY

DOCDATE	OSWER/EPA ID	DOCNUMBER
12/24/1986	OSWER #9355.0-19	9000

GUIDANCE DOCUMENTS

EPA guidance documents may be reviewed at the EPA Region I Superfund Records Center in Boston, Massachusetts.

TITLE
DATA QUALITY OBJECTIVES FOR REMEDIAL RESPONSE ACTIVITIES: DEVELOPMENT PROCESS

DOCDATE	OSWER/EPA ID	DOCNUMBER
3/1/1987	EPA/540/G-87/003	2101

TITLE
PCB SEDIMENT DECONTAMINATION - TECHNICAL/ECONOMIC ASSESSMENT OF SELECTED ALTERNATIVE TREATMENTS. PROJECT SUMMARY.

DOCDATE	OSWER/EPA ID	DOCNUMBER
3/1/1987	EPA/600/S2-86/112	C077

TITLE
CHEMICAL DESTRUCTION OF HALOGENATED ALIPHATIC HYDROCARBONS.

DOCDATE	OSWER/EPA ID	DOCNUMBER
6/23/1987		C014

TITLE
INTERIM GUIDANCE ON COMPLIANCE WITH APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS.

DOCDATE	OSWER/EPA ID	DOCNUMBER
7/9/1987	OSWER #9234.0-05	C055

TITLE
COMPENDIUM OF TECHNOLOGIES USED IN THE TREATMENT OF HAZARDOUS WASTES

DOCDATE	OSWER/EPA ID	DOCNUMBER
9/1/1987	EPA/625/8-87/014	2300

TITLE
COMMENTS ON THE PCB CONTAMINATION-REGULATORY AND POLICY BACKGROUND MEMO.

DOCDATE	OSWER/EPA ID	DOCNUMBER
10/14/1987		C050

TITLE
PCB SEDIMENT DECONTAMINATION PROCESSES SELECTION FOR TEST AND EVALUATION (TAKEN FROM HAZARDOUS WASTE & HAZARDOUS MATERIALS, VOL. 5, NUMBER, 3, 1988).

DOCDATE	OSWER/EPA ID	DOCNUMBER
1/1/1988		C068

TITLE
APPLICATION OF INTERIM SEDIMENT CRITERIA VALUES AT SULLIVAN'S LEDGE SUPERFUND SITE.

DOCDATE	OSWER/EPA ID	DOCNUMBER
4/11/1988		C049

TITLE
COMMUNITY RELATIONS IN SUPERFUND: A HANDBOOK (INTERIM VERSION). INCLUDES CHAPTER 6, DATED 11/03/88.

DOCDATE	OSWER/EPA ID	DOCNUMBER
6/1/1988	OSWER #9230.0-03B	7000

TITLE
SEDIMENT QUALITY VALUES REFINEMENT: 1988 UPDATE AND EVALUATION OF PUGET SOUND AET.

DOCDATE	OSWER/EPA ID	DOCNUMBER
9/1/1988		C095

TITLE
INTERIM FINAL GUIDANCE FOR CONDUCTING REMEDIAL INVESTIGATIONS AND FEASIBILITY STUDIES UNDER CERCLA.

DOCDATE	OSWER/EPA ID	DOCNUMBER
10/1/1988	OSWER #9355.3-01	2002

GUIDANCE DOCUMENTS

EPA guidance documents may be reviewed at the EPA Region I Superfund Records Center in Boston, Massachusetts.

TITLE
BASIC EXTRACTIVE SLUDGE TREATMENT (B.E.S.T.) DEMONSTRATED AVAILABLE TECHNOLOGY.

DOCDATE	OSWER/EPA ID	DOCNUMBER
12/16/1988		C005

TITLE
LAND DISPOSAL RESTRICTIONS. SUMMARY OF REQUIREMENTS.

DOCDATE	OSWER/EPA ID	DOCNUMBER
6/1/1989	OS-520	C123

TITLE
SUPPLEMENTAL RISK ASSESSMENT GUIDANCE FOR THE SUPERFUND PROGRAM. DRAFT FINAL.

DOCDATE	OSWER/EPA ID	DOCNUMBER
6/1/1989	EPA 901/5-89-001	C104

TITLE
GUIDANCE ON REMEDIAL ACTIONS FOR SUPERFUND SITES WITH PCB CONTAMINATION.

DOCDATE	OSWER/EPA ID	DOCNUMBER
8/1/1990	OSWER #9355.4-01	2014

TITLE
GUIDE ON REMEDIAL ACTIONS AT SUPERFUND SITES WITH PCB CONTAMINATION. QUICK REFERENCE FACT SHEET.

DOCDATE	OSWER/EPA ID	DOCNUMBER
8/1/1990	OSWER #9355.4-01FS	C254

TITLE
GROUNDWATER USE AND VALUE DETERMINATION GUIDANCE. A RESOURCE-BASED APPROACH TO DECISION MAKING. FINAL DRAFT.

DOCDATE	OSWER/EPA ID	DOCNUMBER
4/3/1996		C273